

ALEXANDER GRAHAM BELL:  
ALOOF BUT NOT DISCONNECTED

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**Robert V. Bruce.** *Bell: Alexander Graham Bell and the Conquest of Solitude*. Boston: Little, Brown and Co., 1973. xi + 564 pp. Illustrations, bibliography, references, picture credits, and index. \$12.50.

Biography is both an energizing and a limiting vehicle for historians of ideas and institutions. It demands careful attention to the complexity of people, their ideas, and their environment. But biography necessarily distorts; it exaggerates an individual's relationship to his time if only by making him the focus of attention.

Robert V. Bruce deliberately subordinates his knowledge of nineteenth century science and society to the demands of biography in *Alexander Graham Bell and the Conquest of Solitude*. This subordination is fully justified, since Bell led a useful public life while remaining aloof from most of the major institutional developments of his lifetime in his areas of interest and fame. Bell's aloofness, combined with what Bruce calls his

driving "need to communicate," made for a career unique enough to be served perfectly by biography. It is ironic that Bell, the "resounding name," has become an institutional trademark, a word that usually precedes "system." Bell has been enshrined as an inventor, a businessman, a philanthropist, and a movie caricature of the success that awaits the skillful, determined, and lucky in the United States. These labels are not very helpful. He was one of the few men whose life was more interesting than the achievement for which he is most noted.

If Bruce had intended to use biography to answer historians' questions about American science and technology at the end of the last century, he probably would not have chosen Bell as his subject. Bell was born and educated in Europe, but was not trained in a university laboratory. He was a professor of speech, not of a basic science discipline. He belonged to many learned societies; yet he was not involved in the development of professional institutions in any discipline. Bell wrote a few scholarly articles, but only once took appropriate cognizance of a body of prior literature. Although the invention of the telephone was a major contribution, others were approaching the same goal at about the same time. Moreover, Bell was not involved in the subsequent history of the technology or the economics of the telephone. Finally, his religious and political values were conventional for an educated, generous man of his time—agnostic, tolerant, and humane.

Alexander Graham Bell was, Bruce makes clear, the logical man to invent the telephone. Born in Edinburgh in 1847, Bell's family and home life encouraged the interests that shaped his career. His father and grandfather studied, taught, and wrote about problems of speaking and hearing. His mother's deafness demanded constant attention to problems of communication. Bell's formal education developed his skills and interests in music, acoustics, electricity, physics, and physiology.

Bell's personality contributed to his achievement. His aloofness and fondness for solitary work made impossible a conventional career in education or science. Curiosity, imagination, intensity, and ambition characterized Bell's efforts in the critical years preceding the invention of the telephone in 1876, when he was only twenty-nine years old. Moreover, Boston in the 1870s was a particularly suitable environment to stimulate Bell's personality and technological interests. Ideas, audiences, materials, and component parts were readily available in the city. Skilled technicians were employed in shops which did machine work for New England industry—most notably Thomas Watson of "Mr. Watson, come here. . . ." Boston entrepreneurs, knowledgeable about telegraphy from other investments, subsidized and encouraged him.

Bruce describes Bell's family, education, early career, and the environments in which he lived and worked in rich detail, selecting with great skill from varied sources. Edinburgh, London, and Boston at

mid-century are made vivid. Several generations of Bells, Hubbards, and Sanders are portrayed with careful attention to the qualities that made them important to Bell's career and his great achievement.

Bruce is at his best describing and explaining the development of the telephone from two scientific principles, electromagnetism and induction, that had been available for a generation. His ability to combine precise and critical use of primary sources with sound knowledge of science and technology and historical imagination is exemplified in this passage:

While Bell waited with the transmitters all off the circuit he kept a weary and doubtless somewhat baleful eye on the twin of Watson's balky receiver. And then came the miracle.

Bell's reed vibrated. It vibrated by itself, visibly, with no transmitter current in the circuit.

With a wild surmise Bell charged in upon the startled Watson to find out what he had done. . . .

He knew what had happened and he knew what it meant. On the strength merely of some slight residual magnetism, the plucked reeds had induced the undulatory current he had postulated nearly a year before. And that preposterously feeble current, exciting the electromagnets in his room, had made their reeds vibrate in precisely the same way, vibrate vigorously enough to generate audible sounds (pp. 146-47).

The remainder of Bell's life, almost half a century, was anticlimactic, and not only because of his early fame. What Bruce calls his "appetite for miscellany" insured that, despite diligent efforts in several fields, Bell's life and work would be marginal to the history of the institutions of American science and technology in the late nineteenth century. At a time when science was becoming increasingly specialized and professionalized, Bell remained a gifted amateur, a part-time generalist who rarely distinguished between basic research and its practical applications. Although he provided the technical basis for what became the largest corporation in the world, he decided not to be a major participant in the telephone industry. Unlike the contemporary to whom he is most often compared, Thomas A. Edison, Bell had no interest in systematizing the process of research and development.

Bell was a gifted mediator in a society in which people more and more talked mainly to members of their own social and occupational groups and to those who learned their specialized language. He became, rather than founded, an institution. Living in Washington, D.C., active in the Cosmos Club, making his home a social center for men of technical, scientific, and educational affairs, Bell became a national resource. His subsidies contributed to the scientific work of Samuel Langley and Albert A. Michelson and to the founding of the Smithsonian Astrophysical Observatory. By assisting in the development of *Science* and *The National*

*Geographic* magazines, he helped to communicate specialized knowledge to general audiences. Educational assumptions which isolated the handicapped were shaken, though not destroyed, by his advocacy of lip reading and his celebrated work with Helen Keller.

Bruce makes a convincing case that Bell was a fascinating, decent, and likeable man who deserved the esteem of his contemporaries. Few American lives have been recorded so completely. In addition to details about Bell's career and family life, Bruce has considerable information about his eating, drinking, smoking, talking, playing, and sleeping—even about his fear of moonlight. About the only significant personal subject on which the book is silent is Bell's sexual life.

But Bruce, grateful for how much his sources tell him, is cautious about interpretation. Declining to do more than describe Bell's personal habits and characteristics, he declares that the "innermost worlds are not open to a biographer's sure knowledge . . . and therefore such questions as *why* Bell was inclined to be aloof and solitary will be left to the reader's speculation" (p. 308). Even Bell's involvement with deafness, in his relationships with his mother and his wife and in his career as a teacher, is interpreted only when firmly grounded in primary sources (p. 379).

Bruce is more willing to interpret Bell's career as an inventor. His thesis is that "Bell's assets in the telephone triumph became his liabilities in later invention." These assets were: a specific goal of electrical speech transmission; knowledge of a wide range of special fields; ambition; the need for money; and perhaps, Bruce suggests, a need to outshine his father. The success of the telephone satisfied many of Bell's personal needs. "He married Mabel, outshone his father and became a permanent worldwide celebrity." Moreover, his many interests "spread his time and thought over too many fields for productive cultivation of his inventive ideas." Perhaps most important, Bell remained throughout his career an amateur scientist who considered himself a teacher of the deaf by occupation. He never remedied his lack of mathematical understanding or his "reliance on analogy" rather than on investigation and experimentation. Nevertheless, Bruce concludes, Bell was "one of history's most notable inventors," but then adds, paradoxically, that he should be judged on the basis of his varied activities (pp. 250, 365-66).

Having placed Bell outside the major intellectual and institutional changes in American science and technology in the late nineteenth century, Bruce does not strain for resonance with general history or the history of science. Like Bell, he avoids profundity, alludes rather than analyzes. For instance, writing about the development of the telephone, Bruce describes the roles of such men as Joseph Henry and Sir William Thompson without placing them in any but the most cursory context (pp. 204-05). He does not explain how the institutions of science in the 1870s and 1880s permitted Bell and others to see themselves, and be perceived,

as scientists. Quoting Bell on religion, Bruce simply declares his views "characteristic of [scientific men of] that time and since," and returns to his narrative (pp. 231-32).

Bruce should not be faulted for not writing a different book. He clearly had no interest in debating interpretation with his fellow historians. Thus he limits the discussion in his bibliography to Bell material, and his extensive notes draw upon secondary material only when it augments data or interpretation derived from primary sources. Historians can, nevertheless, draw valuable general points from the book. Bruce's integration of European and United States materials is another demonstration of the role of the Atlantic as a bridge rather than a barrier in the history of American scientific, technical, and professional life. His descriptions and analyses of the complicated relationships among particular men, ideas, and institutions are a corrective to the tendency to substitute such loose phrases as diffusion of innovation, specialization of function, or class-formation for historical research. Finally, *Bell* is a model of the critical use of sources to create a monographic past for others to elaborate and speculate about.

Bruce has ordered and analyzed an enormous amount of data and written about it clearly and precisely. The book proceeds chronologically until the invention of the telephone, and thematically thereafter. The early narrative chapters, approximately a third of the volume, are tightly organized and controlled. The later thematic chapters, describing Bell's numerous interests and activities, are less exciting, in part because Bruce occasionally seems to yield to the temptation to write up his research. But the biography was meant to be definitive; it succeeds admirably in achieving that goal.

*Bell and the Conquest of Solitude* is a major contribution to the history of American scientific and cultural life. Like the biographers of late nineteenth century medical giants, the Flexners on William H. Welch or Harvey Cushing on William Osler, Bruce brings knowledge and compassion to the complexity and drama of the technical work of a learned and creative man. Like the outstanding political biographers of men of that era, Nevins and Link, for example, he has a sure grasp of the relationship between his subject and the world around him. Bruce could make yet another contribution if he were to describe and analyze more fully the international scientific and technical culture of which Alexander Graham Bell was such a renowned ornament.

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